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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,786	12/13/2000	Leonard Guarente	E2023-700030	6606

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ONE MAIN STREET, SUITE 1100  
CAMBRIDGE, MA 02142

EXAMINER
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ZEMAN, ROBERT A

ART UNIT	PAPER NUMBER
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1645

NOTIFICATION DATE	DELIVERY MODE
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03/09/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@ll-a.com  
gengelso@ll-a.com

<b>Office Action Summary</b>	<b>Application No.</b> 09/735,786	<b>Applicant(s)</b> GUARENTE ET AL.	
	<b>Examiner</b> ROBERT A. ZEMAN	<b>Art Unit</b> 1645	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-75,84,93,94,102,103,105-109,111 and 116-130 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-75,84,93,94,102,103,105-109,111 and 116-130 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-13, drawn to methods of altering the activity of a Sir2 protein by altering the NAD-dependent acetylation status of at least one amino acid in a protein, classified in class 424 subclass 94.1.
- II. Claims 14-27 and 116-117, drawn to methods of identifying an agent which alters the activity of a Sir2 protein, classified in class 435, subclass 4.
- III. Claims 28-41 and 56-64, drawn to methods of identifying an agent which alters the lifespan of an organism comprising assessing the ability of the agent to alter the NAD-dependent acetylation status of an acetylated protein, classified in class 435, subclass 4.
- IV. Claims 42-47, drawn to methods of altering the NAD-dependent acetylation status of at least one amino acid residue in an acetylated protein utilizing Sir2 and an NAD compound, classified in class 424, subclass 94.1.
- V.. Claims 48-54, drawn to methods of identifying an agent which alters mono-ADP-ribosylation of a nuclear protein, classified in class 435, subclass 4.
- VI. Claim 55, drawn to a method of identifying an agent which alters the life span of an organism by assessing the level of mono-ADP-ribosylation of a nuclear protein in an organism, classified in class 435, subclass 4.

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- VII. Claim 65, drawn to a method of identifying an agent which alters aging of an organism by assessing the level of mono-ADP-ribosylation of a nuclear protein in an organism, classified in class 435, subclass 4.
- VIII. Claims 66-73, drawn to a method of identifying an agent which alters aging of an organism by assessing the NAD-dependent acetylation status of a protein in an organism, classified in class 435, subclass 4.
- IX. Claims 74 and 93-94, drawn to methods of increasing the lifespan of an organism by assessing the level of mono-ADP-ribosylation of a protein in an organism, classified in class 424, subclass 94.1.
- X. Claim 75, drawn to methods of increasing the lifespan of an organism by assessing the NAD-dependent acetylation status of a protein in an organism, classified in class 424, subclass 94.1.
- XI. Claims 84 and 102-103, drawn to methods of decreasing aging in an organism by assessing the NAD-dependent acetylation status of a protein in an organism, classified in class 424, subclass 94.1.
- XII. Claims 105-109, drawn to methods of inhibiting the formation, replication and/or accumulation of rDNA circles by administering an NAD-dependent deacetylase, classified in class 424, subclass 94.1.
- XIII. Claim 111, drawn to a method of decreasing recombination between rDNA in an organism by administering an NAD-dependent deacetylase, classified in class 424, subclass 94.1.

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XIV. Claims 118-130, drawn to methods of evaluating deacetylation of a substrate in the presence of a SIR2 core domain and NAD, classified in class 435, subclass 4.

#### **Sequence Election Requirement Applicable to Groups I and XIV**

In addition, Groups I and XIV, detailed above, reads on patentably distinct SEQ ID Numbers. Each sequence is patentably distinct because the sequences are structurally unrelated sequences, and a further restriction is applied to each Group. Applicant must further elect a single Sir2 protein by SEQ ID NO or name. (See MPEP 803.04).

**Applicant is advised that examination will be restricted to only the elected SEQ ID NO and combination (if applicable) and should not to be construed as a species election.**

The inventions are distinct, each from the other because of the following reasons:

Inventions I-XIV are each separate and distinct from each other as they are drawn to differing methods having different steps, different goals and leading to differing results.

Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

- (a) the inventions have acquired a separate status in the art in view of their different classification;
- (b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;

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- (c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);
- (d) the prior art applicable to one invention would not likely be applicable to another invention;
- (e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

**Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.**

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either

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instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT A. ZEMAN whose telephone number is (571)272-0866. The examiner can normally be reached on Monday- Thursday, 7am -5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Mondesi can be reached on (571) 272-0956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert A. Zeman/

Primary Examiner, Art Unit 1645

March 2, 2010